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6.7.3 Level B Currency. Level B currency is "knowledge related" currency achieved through self-review by an individual crewmember for a particular variant. Self-review typically is accomplished by review of material provided by the operator to crewmembers for that purpose. Self-review may be accomplished at an individual crewmember's initiative, but the operator must identify the material and the frequency or other situations in which the material should be reviewed. Self-review may be based on manual information, bulletins, aircraft placards, memos, class handouts, video tapes, or other memory aids that describe the differences, procedures, maneuvers, or limits for pertinent variant(s) that crews are flying. An example of acceptable compliance with level B currency would be issuance of a bulletin which directs crews to review specific operating manual information before flying a variant if that variant has not been flown within a specified period (e.g., fly that variant or have completed a review of the differences in limitations and procedures within the past 90 days). Another method of compliance would be crew certification on a dispatch release that they have reviewed pertinent information for a particular variant to be flown on that trip. Level B currency cannot, however, be achieved solely by review of class notes taken by and at the initiative of an individual crewmember unless the adequacy of those notes is verified by the operator.

6.7.4 Level C Currency. Level C currency is currency related to one or more designated systems or procedures. Level C currency relates to skill as well as knowledge requirements. An example would be establishment of INS currency, FMS currency, flight guidance control system currency, or other particular currency that is necessary for safe operation of a variant. An example of application of level C for a variant with a flight management system (FMS) would require that a crewmember fly that variant within the specified period or reestablish currency. Currency constraints for level C typically are 90 days. However, some systems or procedures may require shorter time limits while others may be longer than the 6 or 12 month interval for PIC or SIC proficiency checks if the pertinent items are not always addressed by these checks. When level C currency applies, any pertinent lower level currency also is addressed. Examples of methods acceptable for addressing level C currency are:

- a. Crew scheduling practices which result in a crewmember being scheduled to fly a variant with the pertinent system/procedure within the specified period;
- b. Tracking of an individual crewmember's flying of variants which have the particular system/procedure within the specified period;
- c. Use of a higher level method (level D or E currency); or

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d. Other methods as designated or found acceptable by the FSB.

6.7.5 Reestablishing Level C Currency. When currency is lost, currency may be reestablished by completing required items using a device equal to or higher than that specified for level C differences training and checking. Other means to reestablish currency include flight with an appropriately qualified check airman, completion of proficiency training, or a proficiency check. In some instances, a formal refamiliarization period in the actual aircraft with the applicable system operating while on the ground may be acceptable if permitted by the FSB. Such refamiliarization periods are completed using an operator established procedure under the supervision of an airman designated by the operator. In the case of a non-current SIC or FE, a designated PIC may be authorized to accompany a SIC or FE to reestablish currency.

6.7.6 Level D Currency. Level D currency is currency related to designated maneuvers. Maneuver currency addresses knowledge and skills required for performing aircraft control tasks in real time with integrated use of associated systems and procedures. Level D currency may also address certain differences in flight characteristics. Maneuvers specified by the FSB for level D usually are associated with Part 61 Appendix A, Part 121 Appendix F, or AQP flight qualification event requirements. However, level D currency may apply to performance of any maneuvers including related normal, non-normal, alternate, or recall procedures for a particular variant. When level D is necessary, lower level currency is also addressed. A typical application of level D currency is to specify selected maneuvers such as a takeoff, departure, arrival, approach, or landing which are to be performed using a particular Flight Guidance Control System (FGCS) and instrument display system. Either a crewmember must fly a variant equipped with the FGCS and particular display system sufficiently often to retain familiarity and competence within the specified currency period, or currency must be re-established. Level D currency limits for a particular variant are typically set at 90 days for normal maneuvers and procedures. Examples of methods acceptable for addressing level D currency are:

a. Tracking of flights by a particular crewmember in a particular variant to assure experience within the specified currency period;

b. Tracking of completion of specific maneuvers based on logbook entries, Airline Communication & Reporting System (ACARS) data, or other reliable records to assure experience within the specified currency period;

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c. Scheduling of aircraft or crews to permit currency requirements to be met with verification that each crewmember has actually accomplished the assigned or an equivalent schedule;

d. Completion of airmen certification, proficiency check, proficiency training, AQP evaluations, or other pertinent events in which designated maneuvers are performed in a device or simulator acceptable for level D currency;

e. Use of a higher level method (level E currency); or

f. Other methods as designated or found acceptable by the FSB.

6.7.7 Reestablishing Level D currency. When currency is lost, currency may be reestablished by completing pertinent maneuvers using a device equal to or higher than that specified for level D differences training and checking. Other means to reestablish currency include flight with an appropriately qualified check airman during training or in line operations, completion of proficiency training, a proficiency check, or AQP proficiency evaluation.

6.7.8 Level E Currency. Level E currency is currency which requires separate experience in a variant to meet section 121.439 requirements for completion of three takeoffs and landings in the previous 90 days or the equivalent AQP recency of experience. Level E currency may also specify other system, procedure, or maneuver currency item(s) necessary for safe operations, as identified by the FSB. Level E currency generally requires takeoffs, landings, procedures, or maneuvers to be accomplished in a C/D simulator for that variant or the aircraft. It is recognized that Section 121.439 directly addresses takeoffs and landings only, and for certain aircraft takeoffs and landings may not necessarily assure currency for particular systems or other maneuvers. However, FSB provisions related to takeoff and landing are applied in a way which addresses needed system or maneuver experience. For example, if FGCS, FMS, EFIS, navigation, or other system or maneuver experience is the basis for a currency requirement, approval of an operator's program at level E includes use of those systems in conjunction with satisfying Section 121.439 takeoff and landing requirements. In such an instance making three simulator takeoffs and landings in VFR closed traffic without using the FGCS, EFIS, or FMS may not be sufficient to meet level E currency requirements. When level E is assigned to a variant(s) but flight characteristics are common, Section 121.439 credit may be permitted for takeoffs and landings in any variant which has common flight characteristics. In such instances pertinent currency requirements for knowledge, skills, procedures, or other maneuvers may be necessary as defined by the FSB. When common takeoff and landing

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credit is permitted, the FSB also determines any credit or constraints applicable to using C/D simulators for other variants. Assignment of level E currency requirements do not result in assignment of a separate type rating by the FAA. Only assignment of level E training relates to the designation of type ratings. Level E currency applicable to each variant must be tracked by a means the same as or equivalent to those means acceptable for tracking currency under Section 121.439.

6.7.9 Reestablishing Level E currency. When currency is lost, currency may be reestablished by completing pertinent maneuvers using a device specified for level E differences training and checking. Other means to reestablish currency include flight with an appropriately qualified check airman during training or in line operations, completion of proficiency training, a proficiency check, or AQP evaluation.

6.7.10 Competency Regarding Alternate and Non-Normal Procedures. Competency for non-normal maneuvers or procedures is generally addressed by checking requirements. However in certain instances, particular alternate/non-normal maneuvers or procedures may not be mandatory for checking or training. In this situation, it may be necessary to periodically practice or demonstrate those maneuvers or procedures even though it is not necessary to complete them during each check. In such instances, the FSB may specify a currency requirement for training or checking applicable to alternate/non-normal maneuvers or procedures that are to be performed. This is to assure that extended periods of time do not elapse in a series of repeated training and checking events in which significant maneuvers or procedures may never be accomplished. Thus, when an alternate/non-normal maneuver or procedure is not mandatory and is not accomplished during each proficiency training (PT) or proficiency check (PC), but is still important to be occasionally practiced or demonstrated, the FSB may establish a currency requirement. When designated, these currency requirements identify each alternate/non-normal maneuver or procedure, the currency level applicable, and a time period which applies (e.g., within 36 months) or any other necessary constraints (e.g., within the previous three PT or PC events).

6.8 Operator Difference Requirements (ODR's).

6.8.1 ODR Purpose. Operator difference requirements are a formal description of differences between variants flown by a particular operator with a corresponding list of FAR compliance methods pertinent to training, checking, and currency. ODR tables provide a uniform means for operators to comprehensively assess, describe, and manage difference programs, show compliance methods associated with Part 121 Subparts N and O or the AQP SFAR, obtain FAA approval, and make revision to programs when changes are

needed. ODR's provide a basis for FAA approval of differences programs related to mixed fleet flying of variants. ODR's are prepared and applied by each operator conducting mixed fleet flying if MCR's are established by FAA, and if differences exist within an operator's fleet which affect crew knowledge, skills, or abilities pertinent to flight safety. ODR's permit operator specific assessment and approval of unique variant configurations and use of different combinations of variants, while ensuring that a common FAA safety standard is met. ODR's also permit credits, apply constraints, and identify precautions for transition programs between variants. ODR's provide a standardized means for FAA to review, approve, and periodically assess individual operators differences programs. ODR's have other applications such as in the identification of example differences and compliance methods necessary for difference level test formulation and original preparation of MDR's when new variants are type certificated.

6.8.2 ODR Content. ODR's identify a base aircraft, describe differences between variants, and show an operator's methods of compliance with FAA requirements. ODR's are approved by FAA initially and for each revision.

a. Base aircraft. ODR's identify one variant or variant group within an operator's fleet as a base aircraft. The base aircraft serves as a reference for comparison with other variants or variant groups. Selection criteria and characteristics of base aircraft are described in sections 8.4 and 9.4.

b. Variants. ODR's identify particular variants flown by an operator within each fleet. The characteristics and combinations of variants selected may be operator and fleet specific. ODR's consider only those variants and combinations of variants actually flown by that operator. ODR's are not constrained by characteristics of variants that are not flown by that operator.

c. Differences. ODR's describe differences within each fleet between variants or variant groups (e.g., differences between DC9-31, DC9-50, and MD-82 variants are identified for a combined DC9/MD80 fleet, considering a DC9-50 as the base aircraft). Differences from the base aircraft are described by comparing the base aircraft to each variant or variant group directly, or by comparing the base aircraft to one variant, and that variant to other variants in sequence, until each variant is addressed.

d. Significance of Differences. Differences are described in summary form and are categorized by differences in design features, systems, and maneuvers. Differences are evaluated relative to their effect on either flight characteristics and/or procedures. Flight characteristics includes both handling qualities and performance. Procedures consider normal, non-

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normal, alternate, and recall items. Limitations are considered in conjunction with normal procedures.

e. Compliance methods. ODR's show how each operator's program addresses differences, through description of training methods, checking methods, or currency methods for each fleet (e.g., ODR's for B737 fleet, ODR's for DC10 fleet,...). ODR's describe the specific or unique constraints or credits applicable, and any precautions necessary to address differences between variants. Operator difference requirements (ODR's) must comply with and be as restrictive or more restrictive but not less restrictive than FAA master difference requirements (MDR's) and other FSB provisions. Constraints or credits may be applied to all variants in a fleet or only to certain variants. Constraints or credits may address training methods, devices, simulators, checking methods, and currency methods, knowledge, skills, procedure maneuvers, "seat specific" or "crew position specific" factors, or any other factors which apply to or are necessary for safe operations. Training, checking, and currency compliance methods are proposed and revised by each operator consistent with ODR examples from a variety of sources which have been found acceptable to FAA. ODR examples are found in FSB reports, previously approved ODR tables for other operators or fleets, approved ODR tables for similar aircraft types, and manufacturer or STC modifier examples prepared during type certification.

6.8.3 Standard ODR Format. ODR's are depicted in tables in summarized form, using a standardized written or computer format. If necessary, any explanation of details about differences, constraints and credits, precautions or compliance methods are included in attachments or appendices to ODR tables or are cross referenced to other operator documents.

Figure 6-4 shows the general format for operator difference requirements (ODR) Tables. Examples of design feature differences, systems differences, and maneuver differences have been depicted for ODR tables applicable to a B747-200 to B747-400 program. The far left column lists design, system, or maneuver differences which are pertinent. The "Remarks" column summarizes specific areas or items of difference. The "Flight Characteristics" and "Procedural Change" columns identify what (if any) difference effects are noted. The compliance methods section of the table notes the particular operator's approved means of compliance with FAA master difference requirements (MDR) provisions.

In figure 6-4 the following abbreviations were used in the particular B-747 ODR examples shown:

AVT = Audio Visual Training

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FBS	=	Fixed Base Simulator
FFS	=	Full Flight Simulator
CBT	=	Computer Based Training
ACFT	=	Aircraft
EICAS	=	Engine Indicating and Crew Alerting System
FMS	=	Flight Management System
AFDS	=	Auto Flight Display System
EFIS	=	Electronic Flight Instrument System
FMC	=	Flight Management Computer

OPERATOR DIFFERENCE REQUIREMENTS TABLES (ODR TABLE EXAMPLES)

DESIGN FEATURE DIFFERENCES

DIFFERENCE AIRCRAFT: 747-400 BASE AIRCRAFT: 747-200 APPROVED BY (POI)				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CURR
FLIGHT DECK INTERNAL GEOMETRY	DELETION OF FLIGHT ENGINEER STATION REQUIRES TRAINING IN 2-CREW COCKPIT MANAGEMENT TECHNIQUES	NO	YES SEE APP.A NOTE 1		AVT	FBS	FBS		D	D 90 DAYS
PANEL LAYOUT	COMPLETE REVISION		YES		AVT	FBS	FBS		D	D 90

SYSTEMS DIFFERENCES

21 AIR CONDITIONING AND PRESSURIZATION	- AUTOMATED CONTROLS - EICAS DISPLAY/MESSAGES - FMS PRESS. CONTROL - SYS ARCHITECTURE DIFFERENT - DUAL DIGITAL CONTROLLERS W/ AUTO BACK-UP - F/A PAX CABIN ZONE CONTROL - PAX CABIN 75° BACKUP MODE	NO	YES SEE APP.A NOTE 2		AVT	FBS				
22 AUTOFLIGHT	- AFDS W/ AUTOLAND - AUTOTHROTTLE - EICAS DISPLAY/MESSAGES - EFIS FLT MODE ANNUNCIATION	NO	YES SEE APP.A NOTE 3		AVT	FBS		FFS OR ACFT	E	D 90 DAYS
49 APU	- AUTOMATED CONTROL	NO	YES		AVT	FBS				

MANEUVER DIFFERENCES

ILS AND OTHER INSTRUMENT APPROACHES	- USE OF AFDS, FMC, AND AUTOTHROTTLE	NO	YES SEE APP.A NOTE 22		AVT+ CBT	FBS		FFS OR ACFT	E	D 90 DAYS
LANDING AND AUTOMATIC LANDING	- USE OF AFDS, FMC, AND AUTOTHROTTLE	NO	YES SEE APP. A NOTES 22&23		AVT+ CBT	FBS		FFS OR ACFT	E	D 90 DAYS
REJECTED LANDING	- USE OF AFDS, FMC, AND	NO	YES		AVT+	FBS		FFS OR ACFT	E	

FIGURE 6-4

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6.8.4 ODR Approval, Distribution, and Availability. ODR's are approved for each fleet by an operator's FAA principal operations inspector (POI). In accordance with FSB report provisions, ODR's must be prepared, reviewed, and approved prior to Part 121 operations. Approved ODR's are retained by the operator with a duplicate copy as part of FAA certificate holding district office (CHDO) records. AEG's receive copies of or have computer access to each approved ODR to manage FSB programs for new types or variants, ensure standardization, and revise MDR's and FSB reports when necessary. While ODR's are operator unique, information contained in ODR tables is considered to be part of FAA records for that operator and is available to the public in accordance with FAA policies. However, information referenced by ODR's which is not contained in the ODR table itself, if so identified by an operator, may be proprietary information of that operator (e.g., company manuals, contractual specifications, etc.). While FAA has access to this information, public availability may be controlled by that operator.

6.8.5 ODR Revision. ODR tables are revised by operators and reapproved by FAA when fleet characteristics change or when compliance methods change. A fleet characteristics change includes modification or redesignation of base aircraft, addition of variants, change of variants, modification of variants, or phaseout of variants. Changes in compliance methods refer to introduction of new or different training methods, contracting for use of different devices or simulators, revision of checking or currency methods, or other such changes. Revisions to ODR's are also prepared, reviewed, and approved prior to Part 121 operations.

6.8.6 Section 8 of this attachment describes the development, approval, and application of ODR tables to individual operator programs. Section 9 describes FAA review and approval of programs by principal inspectors.

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7. FORMULATION OF FSB REPORTS, MASTER COMMON REQUIREMENTS (MCR's), MASTER DIFFERENCE REQUIREMENTS (MDR's), AND DESIGNATION OF TYPE RATINGS.

7.1 Requirements Formulation Process Overview.

The process for FAA formulation and revision of training, checking, currency, and type rating requirements for new, derivative, or extensively modified aircraft is shown in figure 7-1.

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MASTER REQUIREMENTS FORMULATION (AN FAA/MANUFACTURER/OPERATOR PROCESS)

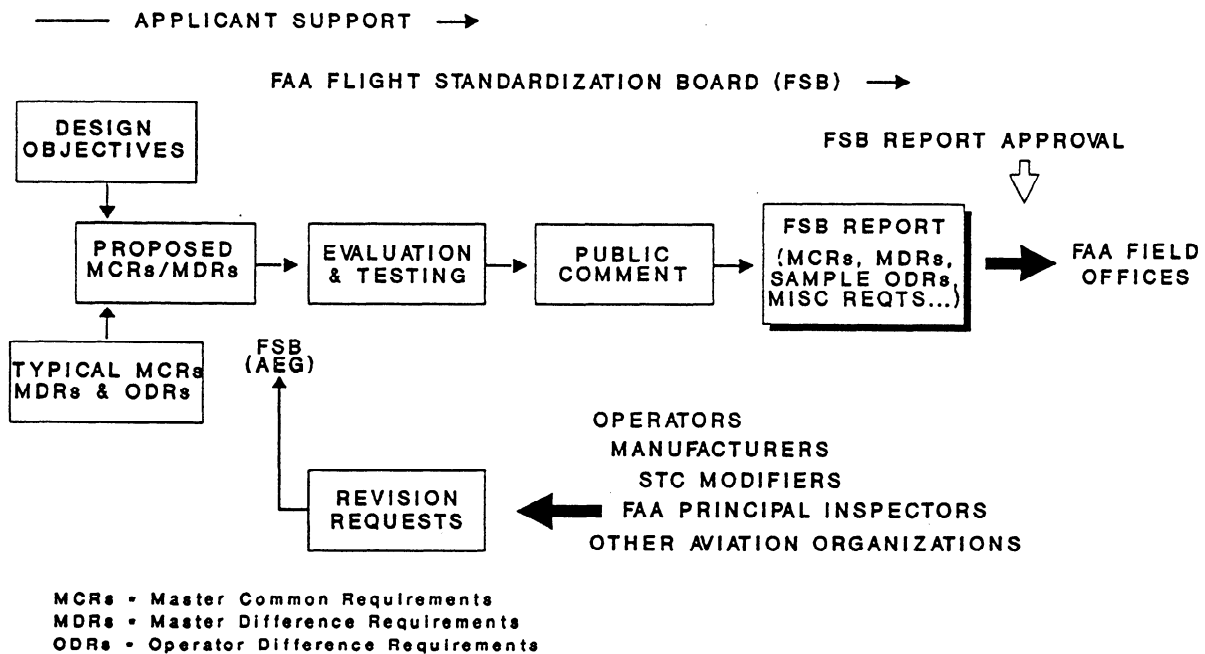


FIGURE 7-1

7.1.1 The process determines which information is required for a type or variant, includes a proposal for requirements, tests and evaluates the proposed requirements, solicits public comment, finalizes the requirements, and applies and implements the FSB requirements. Manufacturers or modifiers propose MCR's, MDR's, examples of ODR's, and any other related FSB provisions necessary. Proposals for requirements are based on design objectives, analysis, evaluation of operating experience, other programs that have been previously shown to be acceptable to FAA, or other methods. Setting of requirements is based on an objective set of tests and standards, analysis of results, and FAA judgments considering operating experience and public comment. Standardized tests are prepared and conducted by the applicant and FAA. Test support is provided by the applicant, and evaluation is conducted by the FAA FSB. Results are evaluated by the FSB in conjunction with the applicant, and proposed minimum requirements are formulated by FAA. Public comments on the proposals are solicited. Final requirements are then set by the FSB by specifying MCR's, MDR's, and other FSB provisions. Findings are described in an FSB report which is disseminated to FAA field offices for application to specific operator programs. The process of formulation and application of FSB requirements starts at the time a new aircraft or derivative is proposed to the FAA and continues throughout the fleet life of that aircraft or variant. For aircraft already in service the process may be initiated when significant modifications are proposed, when requested by operators, or when mixed fleet flying takes place with variants. Periodic revisions of requirements are addressed as the need is identified by FAA. Revisions are initiated either by FAA, operators, manufacturers, modifiers, interest groups, or the public when requested.

7.2 Proposals for MDR's, MCR's, Example ODR's, and Special Requirements.

7.2.1 When Proposals are Necessary. The FAA determines which information is needed for a type or variants and which requirements, including MCR's, MDR's, or other elements of FSB reports, are pertinent or necessary. This is usually determined in conjunction with type certification or supplemental type certification programs. When required, manufacturers or modifiers are advised by FAA of the information which is necessary. For new aircraft that do not yet have variants (original type certification), initial MCR's are formulated. For variants, MDR's and any necessary changes to existing MCR's are proposed. For new aircraft which also have variants being certificated at the same time, both MCR's and MDR's may be developed simultaneously. For certain types which are in limited use (e.g., Caravelle, DC-6, etc...), or which have few or no variants and have had successful operational experience under FAR 121, the FAA may elect not to develop MCR's, MDR's, and FSB reports. Air carrier programs using these aircraft are approved on a case by case basis.

7.2.2 Proposal Formulation. The requirement formulation process typically starts when a manufacturer proposes a new design or design modification. The manufacturer or modifier formulates necessary information for training, checking, and currency for the type or variant in proposals for MCR's, MDR's, example ODR's, and any other supporting information necessary for the FSB report. The applicant considers present and proposed variants, existing MCR's and MDR's, and existing or proposed ODR's. MCR's and MDR's for other similar aircraft, typical ODR tables that are already approved and used by operators, new types of proposed training devices, or other factors in addition to characteristics of the proposed aircraft itself may also be considered. To support development of a proposed MDR, the manufacturer prepares example ODR tables for pertinent variants. These examples represent proposals for programs for those specific variants and configurations which could be approved by FAA. Groups of variants within the type are then identified for the proposed MDR table. Any necessary tests are formulated to assess difference levels and associated training, checking, and currency requirements for incorporation in the MDR table. Interpretations of possible test results are identified, and agreement is reached between FAA and the applicant on specific tests, devices, and schedules to be used for the test program. Proposals for the following items are submitted to FAA, as necessary:

- a. master common requirements;
- b. master difference requirements;
- c. example operator difference requirements;
- d. tests and criteria to be used;
- e. other supporting information related to training, checking, or currency programs.

7.3 Difference Level Tests.

7.3.1 Standard Tests Used. A sequence of five standard tests described in attachment 4 is used to set MCR's, MDR's, acceptable training programs, other FSB provisions, and define type rating requirements. One or more of these five tests are applied depending on the type of certification, difference level sought, and the success of any previous tests used in identifying MCR's or MDR's. Only those tests needed are used to establish requirements. Type rating requirements, training, checking, and currency limits are established by the outcome of these tests and any resulting

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difference levels that apply. If during this testing it is determined that the assignment of level E differences training is required for one or more variants, the FAA will establish an additional type rating. When a level E variant is first identified, the FAA assigns an additional pilot type rating to cover pertinent variants in that fleet of aircraft.

7.3.2 Steps in the Testing Process. The typical steps of the testing process are as follows:

- a. Representative training programs, difference programs, and necessary supporting information are developed as needed;
- b. Proposed MCR's, MDR's, and example ODR's are identified;
- c. The applicant and FAA determine which tests and criteria apply;
- d. The applicant and FAA determine which aircraft, variants, simulation devices, or analysis are needed to support testing;
- e. A proposal is made to the FAA, and agreement is reached on test procedures, schedules, and specific interpretation of possible results;
- f. Tests are conducted and results evaluated;
- g. FSB draft requirements are formulated.

7.3.3 Test Purpose and Application. A summary of the purpose and application of each of the five difference level tests is shown in figure 7-2.

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TEST DEFINITIONS

	<u>TEST PURPOSE</u>	<u>APPLICATION</u>
T1	ESTABLISHES FUNCTIONAL EQUIVALENCE	SETS LEVELS A/B, OR COMMON TYPE RATING
T2	HANDLING QUALITIES COMPARISON	FAIL REQUIRES E, & T5; PASS PERMITS T3, & C/D
T3	EVAL SYSTEMS DIFFS & SETS TRNG/CKNG REQTS	SETS LEVELS C OR D, (CRIT FAILURE SETS E)
T4	SETS OR REVISES CURRENCY REQUIREMENTS	USED TO ADJUST FSBs REQTS - IF NEEDED
T5	SETS TRAINING/CHECKING FOR NEW OR 'E' ACFT	SETS LEVEL E

FIGURE 7-2

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7.3.4 Functional Equivalence - Test 1 (T1). Test 1 evaluates functional equivalence. T1 consists of a Part 61 or Part 121 pilot certification flight test administered in the comparison (variant) aircraft being tested and using a crew trained and experienced only in the base aircraft. Acceptable crew performance in the test, without differences training, establishes that the comparison and base aircraft are sufficiently alike to assign level A or level B. Test 1 is also used to determine if a common type rating may be designated for aircraft types which have separate type certificates. The distinction between assignment of level A and level B is based on analysis and results of the test with specific criteria described in attachment 4. Failure of T1 generally requires completion of T2 and T3.

7.3.5 Handling Qualities Comparison - Test 2 (T2). Test 2 is used to compare handling qualities between variants. T2 consists of selected Part 61 or Part 121 pilot certification flight check maneuvers administered in the comparison (variant) aircraft under test while using a crew trained and experienced only in the base aircraft. In T2, normal and non-normal flight maneuvers related to handling are performed using the aid of a safety pilot. However, the safety pilot may only aid in areas not related to evaluation of operationally relevant handling qualities. Acceptable crew performance in completion of designated maneuvers, without differences training, establishes that the variant and base aircraft are sufficiently alike in handling characteristics to permit assignment of level C or level D. Passing Test 2 permits a subsequent test (T3) assessing systems differences, training, and checking to be conducted. Failure of Test 2 indicates that major differences exist in handling characteristics during critical phases of flight (such as takeoff or landing) or that numerous less critical but still significant handling qualities differences exist between the base aircraft and variant. Accordingly, Test 2 failure requires the assignment of level E training. With level E, an aircraft or C/D simulator must be used to satisfy training and checking objectives. Also with level E training, a separate type rating is assigned to the fleet.

7.3.6 Systems Differences Test and Validation of Training and Checking - Test 3 (T3). Test 3 is a dual purpose test used to identify implications of systems differences on training and checking methods and devices, and at the same time validate training and checking methods and devices at level C or level D. T3 is administered in two phases following differences training of a crew in the comparison aircraft. The first phase is the completion of a pilot certification flight check to assess crew knowledge, skills, and abilities pertinent to operation of the variant being evaluated. The second phase is administered following completion of the flight check and is a simulated line oriented flying (LOF) test. The line oriented flying phase of the test is used to validate the training and

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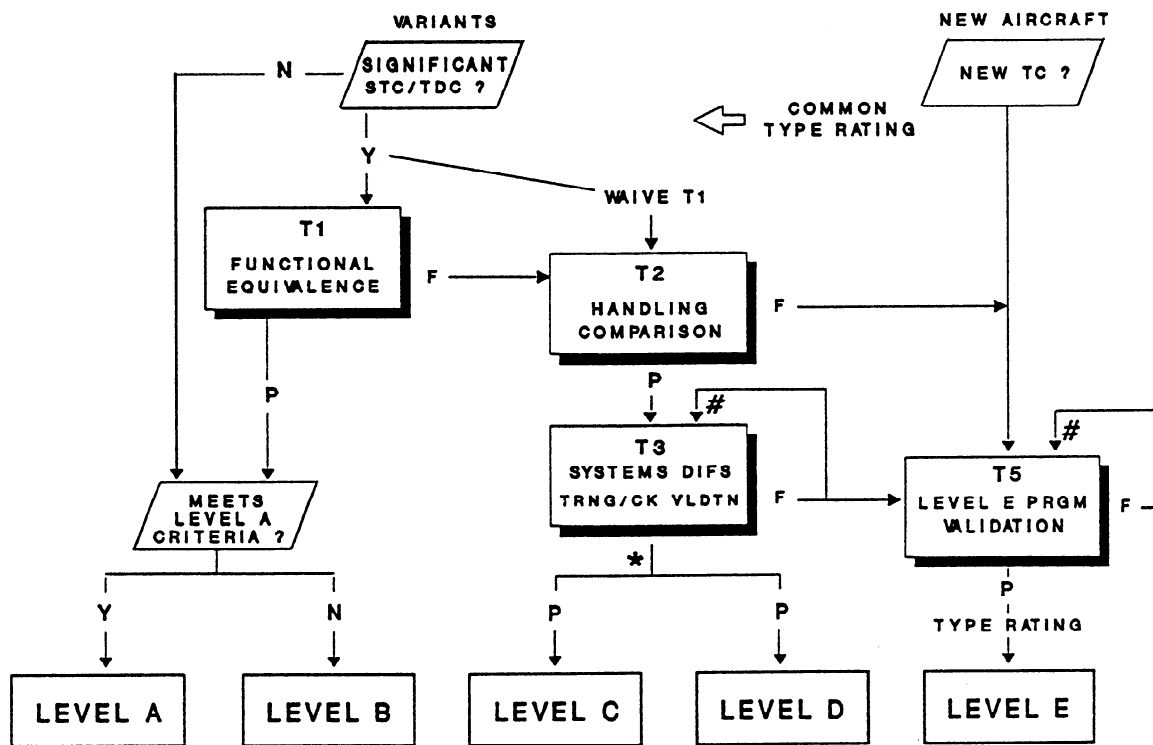
checking being proposed, as well as to fully assess particular difference areas, examine implications of mixed fleet flying, assess special circumstances such as MEL effects, and evaluate the effects of crew errors potentially related to the differences. The test is done in a realistic line flight environment that includes typical weather, routes, airports, ATC, and other factors which are characteristic of those that the aircraft will be operated in. LOF tests may be conducted in test aircraft, simulators, in conjunction with function and reliability certification tests, or with a combination of these. Passing T3 leads to setting of respective difference levels at C or D. Failure of Test 3 may require increased programs within the proposed level or use of a higher level. In certain cases failure at D level may require the assignment of level E and a different type rating. In the event of repeated failures at level D, program requirements approaching full initial qualification levels, or where failures show that the high fidelity environment of C/D simulators or the aircraft is needed, level E may be assigned. In the event that level E is required, a separate type rating is assigned for the fleet .

7.3.7 Currency Validation - Test 4 (T4). Test 4 is a currency test that is used when operators seek relief from FSB designated currency requirements. This occurs when less restrictive currency requirements are requested by a manufacturer or operator. Basic currency requirements are set by the FSB based on Tests 1, 2, and 3 and are applied directly. Test 4 is used when a manufacturer or operator seeks relief from these conservative currency requirements and believes that other currency requirements may adequately provide for successful and safe operation of a particular aircraft or variant.

7.3.8 Initial or Transition Program Validation - Test 5 (T5). Test 5 is a validation test for training, checking, and currency requirements at level E similar to Test 3. However, Test 5 is applicable to new aircraft types that do not have variants. T5 is also applicable to derivative aircraft when level E is assigned as a result of T2 or certain T3 failures. Since aircraft evaluated with T5 are assigned level E and separate type ratings, Test 5 may credit applicable testing done during T2 and T3 in the event of T2 or T3 failures.

7.3.9 Test Relationships and Applications. The test process relationships, the sequence of conducting tests when more than one test is needed, and application of tests outcomes are shown in figure 7-3.

TEST PROCESS AND SEQUENCE



KEY

- * - LEVEL AS PROPOSED BY APPLICANT
- # - PROGRAM REVISION REQD
- P - PASS F - FAIL
- Y - YES N - NO

FIGURE 7-3

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The start of the process is shown at the top of figure 7-3. Resulting difference levels are at the bottom. New aircraft, for which an original type certificate is sought, follow the testing path at the right of the diagram for T5. At the end of the process the aircraft is assigned a new type rating. The process starts at the top center of figure 7-3 for variants. A series of decisions or tests leads to assignment of one or more levels A through D and in some instances may lead to level E. If level E is assigned as a result of this path, an additional type rating is assigned within that fleet. This process is followed whenever a new aircraft is proposed, when significant changes are proposed, or when revisions to existing requirements are needed as a result of requests for change or operating experience. In the diagram "P" denotes the passing of a test, and "F" denotes the failure of a test. "Y" and "N" denote yes and no answers to decision points regarding criteria rather than test outcomes.

7.3.10 Test Failures and Retesting. Generally, failures do not have paths back to lower levels. T3 failure at level C can lead to subsequent passage at C or D. Similarly, failure at level D can lead to either D or E, but not C. Failure at level E can only lead to retesting with increased programs, improved programs, or improved devices since there is no higher level. T5 failure paths do not lead back to level C or level D. However, subsequent new programs do not preclude making a proposal at a lower differences level if technology changes, aircraft redesign takes place, training methods significantly change, or device characteristics and effectiveness change.

7.3.11 Common Type Rating Tests. Aircraft proposed for a "common type rating" follow the path from the top right of figure 7-3 through T1 and T2 to the assignment of level A or B if successful. Common type ratings may not be initially approved at level C or level D. Thus, T3 is only applicable to evaluation of variants that already have a common type rating established and seek to retain the common rating when subsequent changes are proposed beyond level A or B. After demonstration of acceptable mixed fleet flying at level A or B, such aircraft may be considered for evaluation using T3 for assignment of level C or level D.

7.3.12 Currency Tests. Currency tests T4 are not shown in figure 7-3 because they are necessary only when operators, manufacturers, or modifiers seek relief from conservative currency requirements initially set by the FSB. When such relief is sought, information derived from T2 and T3 is used as a baseline and for comparison with performance following T4 to validate revised currency standards.

7.3.13 Detailed Test Specifications. A detailed specification for the evaluation process and tests to establish difference levels is described in

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attachment 4.

7.4 Flight Standardization Board Assessments and Proposal Formulation.

The FSB assesses the applicants proposals, test results, operating experience, analysis, and any other relevant factors in order to formulate an FAA proposal for MCR's, MDR's, and other pertinent training, checking, currency requirements to be included in an FSB report. The FSB proposal may also consider analysis of results or other relevant information provided by the applicant following testing. The FSB either validates the applicant's proposed MCR's, MDR's, training programs, and other information, or generates alternate requirements.

7.5 Public Comment.

7.5.1 Comment Solicited. The FSB proposal is circulated for FAA and public comment. Interested parties representing the manufacturer, operators, other pertinent FAA organizations such as engineering and flight test, pilots' associations, and other aviation representatives are invited to comment, provide relevant information, and make recommendations.

7.5.2 Public Meetings. For FSB initial determinations or major revisions a public meeting is held as part of the comment submission and review process. Public FSB meetings are usually held when initial FSB determinations and major changes address new, unique, controversial, or otherwise complex issues, and public discussion and comment can facilitate resolution of the issues. A public FSB meeting provides an opportunity for the FAA to directly review comments, concerns, recommendations, or factual information pertinent to an FSB prior to making any final determinations. A public meeting also provides various groups and the FAA an opportunity to directly exchange technical information in a timely manner and provide counter points that otherwise would be difficult to evaluate, interpret, or to apply. Proposed MCR's, MDR's, example ODR's, and other aspects of draft FSB reports are reviewed at the public meeting. Comments, concerns, or other information pertinent to the determination of the required difference levels is considered until the comment deadline. Comments received after the deadline are considered at the time of the next periodic FSB review unless an immediate safety problem is apparent.

7.5.3 Comment for Time Critical Revisions. Time critical FSB revisions to MCR's, MDR's, example ODR's, or other FSB provisions may be made on an emergency basis without prior public meeting or comment. However, comments may be solicited and considered subsequently. Appeal of such time critical FSB decisions is permitted and follows the same process shown in section 12.

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7.6 FSB Final Determinations and Findings.

7.6.1 FSB Determinations. Following a public meeting any written comments submitted to FAA are reconciled, and final FSB determinations are made. Specification of MCR's, MDR's, example ODR's, acceptable training programs, and other FSB provisions are completed. Any necessary airman testing or currency provisions are identified. Assignment of any necessary type rating(s) is made.

7.6.2 Basis for FSB Judgments. FSB judgments are based on review of the applicant's supporting documentation, proposed ODR tables, test results, and any other pertinent information, such as FAA policies, operating experience, and results of other similar FSB evaluations. Specifically, FSB report provisions are based on or consider:

- (a) Appropriate data, evaluation, or tests. Testing may include aircraft demonstration, simulation tests, device testing, or analysis;

- (b) Direct experience. Where a substantial amount of industry experience exists with successful mixed fleet flying between particular variants, minimum difference level requirements may be formulated based on that operational experience. Further, comparisons may be drawn with similar aircraft variants that are already assigned difference levels. Experience with successful operational programs having particular devices, training, checking, or currency requirements may be used as a basis to set difference levels.

- (c) Indirect experience. Applicable experience with foreign operators, military programs, or other programs that can establish the suitability of training, checking, or currency standards may be permitted as a means for FSB's to set MDR or ODR levels.

- (d) Applicant, industry, and public comment. FSB requirements are set following solicitation and review of comments when necessary in a public FSB meeting.

7.6.3 Device or Simulator Characteristics. Minimum characteristics for devices or simulators for training, checking, or currency are noted using standard training device or simulator definitions. When standard criteria for methods, devices, or simulators are not appropriate for a type or variant, the FSB identifies suitable criteria to be applied and coordinates with the FAA National Simulator Evaluation Team. Standard devices and simulators applicable to each difference level are shown in figure 7-4.

STANDARD METHODS, DEVICES, AND SIMULATORS

(TYPICALLY ACCEPTABLE)

DIFFERENCE LEVEL	DIFFERENCE LEVEL DEFINITION	METHODS	DEVICES OR SIMULATORS (1)
A	SELF INSTRUCTION	BULLETINS MANUAL REVISIONS HANDOUT MATERIAL	---
B	AIDED INSTRUCTION	SLIDES/VIDEO TAPES STANDUP INSTRUCTION COMPUTER BASED INSTRUCTION (TUTORIAL)	---
C	SYSTEMS DEVICES	---	TRAINING DEVICES LVL 2/3/4/5 FULL TASK COMPUTER BASED INSTRUCTION (CBI/CBT) (2)
D	MANEUVER DEVICES	---	TRAINING DEVICES LVL 6/7 SIMULATOR A OR B (3)
E	SIMULATOR C/D OR AIRCRAFT (FULL FIDELITY ENVIRONMENT)	---	SIMULATOR C OR D AIRCRAFT (4)

FOOTNOTES

- (1) TRAINING LEVEL AND SIMULATOR DEFINITIONS ARE AS SPECIFIED BY SFAR 58 AND AC 120-45A
 (2) TRAINING DEVICE LEVELS 3/4/5 TYPICALLY INCLUDE COCKPIT PROCEDURE TRAINERS, COCKPIT SYSTEM SIMULATORS, AND SIMILAR DEVICES
 (3) TRAINING DEVICE 6/7 OR SIMULATOR A/B TYPICALLY INCLUDES FIXED BASE SIMULATORS, VISUAL SIMULATORS, OR PHASE I SIMULATORS
 (4) SIMULATOR C OR D INCLUDES PHASE II OR PHASE III SIMULATORS

FIGURE 7-4

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7.7 FSB Report Preparation, Distribution, and FAA Application.

7.7.1 Report Preparation and Approval. After MCR's and MDR's are finalized, the FSB report is prepared. Sufficient background or explanatory material is provided in the report to permit FAA personnel to properly administer FSB provisions. FSB report contents are specified in attachment 1. The FSB report is reviewed and approved as designated by AFS-1.

7.7.2 FSB Report Distribution. The FSB report is distributed to FAA field offices for implementation in approval of particular operator's programs. The FAA technical requirements described in FSB reports are primarily intended for FAA field office use in administration of FAR, but they are also made available to the public on request. Operators receive reports or pertinent provisions through their respective FAA certificate holding district offices (CHDO), industry associations, or the manufacturer or modifiers. Limited copies of FSB reports are also publicly available through FAA Aircraft Evaluation Groups (AEG's) or other Flight Standards district offices, and in some instances manufacturers, modifiers, or other sources may redistribute FSB reports or portions of reports.

7.7.3 FSB Report Implementation. FSB requirements, recommendations, and guidance are provided to FAA field offices through FSB reports for each type, common type, or related type, including variants. These reports are directives to FAA offices to identify acceptable methods of applying pertinent FAR to each specific operator. FSB provisions set acceptable standards by which FAA inspectors approve, review, correct, or limit individual operator programs. The FSB report is the basis for approval of training, checking, and currency programs approved by each FAA office. The report is also the basis for airmen certification by FAA or operators and surveillance of operator programs. Principal inspectors may approve individual operator's programs which meet or exceed master requirements, but they cannot approve programs which are less than master requirements. Geographic inspectors use report provisions to assure application of correct standards for inspections conducted and especially for review of programs conducted at crew bases under their surveillance. Aviation safety inspectors, aircrew program managers (APM's), and aircrew program designees (APD's) use the report as the basis for administration of oral examinations, simulator checks, flight checks, proficiency checks, IOE, and for review of particular programs at a principal inspector's request. Preparation and application of ODR's by operators is described in section 8. Review and approval of ODR's by FAA PI's is covered in section 9.

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Appendix 1

7.8 FSB Report Revision.

7.8.1 General FSB Revision Process. A general FSB revision process is established to update standards and to allow adjustment of the standards where an applicant or operator can show that revision is appropriate. This is done through periodic FSB meetings in conjunction with flight operations evaluation board (FOEB) meetings. Major modifications to FSB requirements are accomplished through the same process as initial requirements and may include subsequent FSB public meetings. Meetings may be needed annually for active fleets with numerous change requests. Meetings may be needed infrequently for types and variants not undergoing significant change. A provision is made for accommodation of minor revisions that can be done on short notice in the interim periods between formal FSB meetings. Revision requests approved between meetings would be validated at subsequent FSB meetings.

7.8.2 Procedures for Requesting Revisions to Master Requirements. MCR's, MDR's, or other provisions of the FSB report may be modified based on requests to the FSB by:

- a) U.S. operators through respective PI's;
- b) manufacturers through AEG's;
- c) other interest groups, foreign authorities, foreign operators, or other organizations through the AEG's or as designated by AFS-1.

When requests with supporting justification are received by the AEG/FSB, a determination is made as to whether the request can be addressed immediately, whether a full board meeting is needed, or whether additional testing, evidence, or supporting documentation is required. The person or organization making the request is notified of the process planned for FSB resolution of the request. Once the method of addressing the change is determined, the request is scheduled for consideration in the designated time frame, and any necessary testing is arranged. Upon completion of testing and review by the FSB, revisions are made to the MDR's, FSB report, or associated documentation in a manner similar to the initial FSB report and findings.

7.8.3 Revision for New Variants. When a manufacturer or modifier proposes to develop or add a significant aircraft variant to a fleet, MCR's, MDR's and other FSB provisions must be revised to address that variant aircraft. If a manufacturer or modifier initiates this action, the procedures noted in section 7 regarding initial determination of minimum training, checking,

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currency and type rating requirements are followed. If an operator proposes to add a significant variant that is not covered within an existing MDR, for example a foreign manufactured aircraft, principal inspectors should consult with pertinent FSB chairman through the AEG. The FSB will determine the best method of addressing the development of the necessary MDR tables. This is particularly important for older aircraft fleets in which differences may be significant, but manufacturer support is no longer available, or for aircraft imported into the U.S. for Part 121 use that have otherwise been used only by foreign operators.

7.8.4 Revision for Aircraft Modified by Operators. When an aircraft is to be modified by a Part 121 operator, the principal inspector must determine if the change affects MDR's, example ODR's, or other FSB report provisions. The criteria to be used for this assessment is whether the difference affects crew knowledge, skills, or abilities pertinent to flight safety. If a change meets this criteria, the operator should supply the PI with a difference description and analysis of the effects of the difference. The PI makes a preliminary estimate of the difference levels, variant groups, or other provisions affected and advises the applicable FSB/AEG. The AEG/FSB may concur with the PI's assessment or require other action. If FSB action is required the AEG will initiate that action through the FSB chairman. The FSB may require that additional information or analysis be provided or that the entire test process or parts thereof, be applied. The AEG may authorize the PI to approve assignment of the difference level and associated requirements at A or B level. In any case if MCR's or MDR's are to be adjusted, the approval will result in a change or update to apply to any or all operators. If the changes are beyond level B the full FSB process is applied.